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Indiana Harbor Ship Canal
ArcelorMittal Indiana Harbor LLC
Indiana Harbor West – Outfalls 009 & 010

Occurrence and Distribution of Oil Sheens

ArcelorMittal initial draft, to be edited upon review of data from EPA and USCG that have been requested through a Freedom of Information Act Request.

This is an outline of a work plan for field and analytical work for IH West Outfalls 009 & 010 for discussion with the Coast Guard. A separate and similar outline was prepared for IH CWTP Outfall 001 for discussion with EPA. Both plans will rely on the same background sampling sites. One field study will be conducted to support both work plans.

1.0 Introduction and Background

- Brief summary of recent history – 2017
- Findings to date – based on ArcelorMittal, EPA and USCG investigations and data
- Why more studies – requests from EPA, USCG
- The study area includes:
  - Indiana Harbor Ship Canal (IHSC) upstream of dredged area and upstream and downstream of IH West Outfalls 009 & 010
  - Lake George Canal (LGC)
  - ArcelorMittal IH West Outfall 009 & 010 and all tributary sewer systems
  - ArcelorMittal Intake No. 2

2.0 Scientific Objectives

- Characterize oil sheens on the IHSC, LGC and oils in sediments in the IHSC and LGC, as follows:
  - Total Petroleum Hydrocarbons (TPH) quantitation and fingerprinting (modified EPA Method 8015D)
  - Polynuclear Aromatic Hydrocarbon (PAH) quantitation and fingerprinting (modified EPA Method 8270)
  - Quantitative biomarker fingerprinting, as may be determined necessary (EPA Method 8270)
- Using the analytical methods noted above, characterize sediments and oils sheens as may be present at or near ArcelorMittal IH West Outfalls 009 & 010 as well as identified internal sewer system sediment and oil sheen samples, and possible IH West oil source samples.

- To the extent possible with data generated from this study, determine whether and to what extent oil sheens observed on the Indiana Harbor Ship Canal near IH West Outfalls 009 & 010 are attributable to upstream sewer system sources, legacy deposits of oil in background samples and/or ArcelorMittal discharges.

3.0 Study Design

Field Program – Indiana Harbor Ship Canal and Lake George Canal

Sediment Samples. Because surface sediments are likely to give rise to oil sheens observed on the IHSC, surface sediment samples (approximately 0 to 6") will be collected from a boat with a Ponar dredge or other suitable sampling device at the locations noted below (see Figure 1). Two sediment samples will be collected across a transect at each sediment sampling location, each approximately one-third of the distance from each bank, or less depending on location to avoid dredged areas. The samples collected at each location will be analyzed separately as described above.

Sample Station ID	Description	Notes
IHSC-1	Indiana Harbor Ship Canal ~ 100 yards upstream of southernmost dredged section	Part of IH CWTP Outfall 001 study and IH West Outfall 009 & 010 study
LGC -1	Lake George Channel ~ 150 yards downstream of Indianapolis Boulevard	
IHSC-2	IHSC ~ 200 yards upstream of IH CWTP Outfall 001 Canal Street	
IHSC-3	IHSC ~ 100 yards downstream of IH CWTP Outfall 001	
IH CWTP-1	IH CWTP at Outfall 001 ~ in the immediate vicinity of IH CWTP Outfall 001	Part of IH CWTP Outfall 001 study
IHSC - 4	IHSC ~ 200 yards upstream of IH West Outfalls 009 & 010	Part of IH West Outfall 009 & 010 study
IHSC - 5	IHSC ~ 100 yards downstream of IH West Outfalls 009 & 010	
IH West-1	IH West at Outfalls 009 & 010 ~ in the immediate vicinity of IH West Outfalls 009 & 010	

Oil Sheen Samples. IHSC and LGC oil sheen samples will be collected at or near the above-listed sediment sample locations and identified bridges to the extent oil sheens are visible. Oil sheen samples will be collected from a boat with Teflon mesh net samplers deployed on a pole sampler. The field crew will have the flexibility to collect oil sheen samples at their discretion, with the following principal objectives:

- Collect one oil sheen sample at or near each of the above sediment sample locations to the extent oil sheens are present. Sample locations to be documented with GPS coordinates.

- Collect additional oil sheen samples at locations upstream and downstream of IH West Outfalls 009 & 010 to the extent oil sheens are present. Sampling of the heaviest oil sheens is preferred.

Field Program – ArcelorMittal Facilities

Outfall Sampling. Oil sheen samples will be obtained in the IHSC at or near IH West Outfalls 009 & 010, to the extent oil sheens are present. If present, Outfalls 009 & 010 oil sheen samples (inside the oil boom) will be collected on two separate days during the week when the IHSC sediment and oil sheen sampling program is conducted. Upon collection of oil sheen samples, the following will be noted:

- If the oil sheens appear to originate from the IHSC (surface, sediment), or ArcelorMittal IH West Outfalls 009 & 010;
- If there are any visible sheens in the near field immediately upstream at the time of sample collection, and if so, a sample will be collected;
- If the sheens were observed to leave the area where observed.

Internal Sewer System and Source Oil Sampling. Scope to be determined. Possible initial sample locations, other sampling to be determined:

- IH West Outfall 009 & 010 sewer systems
- Undredged sections of IHSC adjacent to Outfalls 009 & 010

4.0 Reports

Separate reports will be prepared for IH CWTP (Outfall 001) and IH West (Outfalls 009 and 010) drawing on common IHSC background/upstream data and findings, as appropriate:

- Executive summaries with principal findings
- Summary reports of field sampling program and field observations
- Detailed third-party assessments by NewFields using TPH, PAH and possibly biomarker fingerprinting described above.
- Comparison of study results with observations and data developed previously by ArcelorMittal, EPA and USGC
- ArcelorMittal status with respect to EPA 2006 No. 2 Intake Oil Recovery order

- Overall findings and conclusions
- Appendices will include summaries of recent (2017) ArcelorMittal investigations; historical data and findings; field and analytical reports from this study; information and data provided by EPA and the USGC; and, report by Ramboll Environ for EPA 2006 No. 2 Intake Oil Recovery order.

FIGURE 1

DRAFT WORK PLAN OUTLINE
ARCELORMITTAL IH WEST 009 & 010

SEDIMENT SAMPLING LOCATIONS AND ARCELORMITTAL INDIANA HARBOR OUTFALL LOCATIONS

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